

MAGNETIZATION OF PERMANENT MAGNET ROTORS WITH OFFSET ROTOR SECTIONS

ABSTRACT OF THE DISCLOSURE

A permanent magnet electric machine with reduced cogging torque includes a plurality of axial rotor sections that are defined on a radially outer surface of a rotor. The axial rotor sections include a set of permanent magnets that are in an unmagnetized state and that have opposite edges that are aligned with an axis of the rotor. The axial rotor sections are rotationally offset such that the edges of the permanent magnets create stair step interfaces. The n sets of permanent magnets are magnetized using a magnetizing fixture. The permanent magnets have a generally rectangular shape and are preferably arc magnets or breadloaf magnets. The conductors of the magnetizing fixture are aligned with the stair step interfaces. A magnetic field induced in the permanent magnets is substantially reduced along the stair step interfaces.